Have You Talked to *Your* Computer Lately?

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HURLBURT FIELD, Fla. — The way Air Force Maj. Eben Hughes sees it, the days of double-clicking a computer mouse are numbered.

Armed with little more than a $70 headset and commercially available speech recognition software, Hughes and the Command and Control Battlelab here are trying to replace the computer mouse with the microphone.

Speech recognition technology is one of a handful of initiatives on display at Joint Expeditionary Force Experiment (JEFX) '99, a multiforce, multinational "laboratory" charged with evaluating new technology as well as new command and control procedures for the Air Force of the 21st century. More than 700 people were gathered at Hurlburt to participate in the experiment.

The speech recognition experiment will help determine if the Air Force can use software that understands human speech to eliminate keystrokes on a keyboard or dragging and clicking on menus with a mouse.

"This technology is already out there," said Hughes, chief of the speech recognition initiative. "Industry is going to make this part of everyday use. You're going to see it in the home. We're trying to stimulate the minds of our leaders to consider the possibilities the technology can bring."

In a series of hands-on demonstrations with visitors and other experiment participants, Hughes showed how speech recognition speeds up the process of building an air tasking order. Essentially, the software understands simple commands to fill out the tasking order. For example, the command "Assign Bravo 00102 to 48th Fighter Wing" tells the computer to fill a blank assigning an aircraft to the fighter wing.

The software recognizes between 500 to 2,000 words, said Air Force Lt. Col. Phil Romanowicz, chief of the C2 Battlelab's Initiative Management division. Unlike some commercial software, the speech recognition programs on display here don't rely on vast dictionaries of words to convert dictation. In fact, the software is a picky application and doesn't take dictation.

"With dictation software, the program takes up to 40 minutes to teach the computer speech patterns and specific words," he said. "With this, the train-up time was zero minutes."

Preliminary studies during various "spiral" experiments leading to the JEFX showed speech recognition trimmed time spent on building the tasking order by about 7 to 9 percent; however, the chief benefit may lie in saving training time.

"The guys (testing the application) perceived it as faster," Romanowicz said. "It takes less time to learn the process of building the tasking order, making it more user friendly. That means less training time."

Also, the technology could help reduce the number of people working on tasking orders.

"Right now, it takes 12 to 15 aircrew (members) to build the tasking orders," Romanowicz said. "That's a lot of bodies out

of cockpits. This technology could help us reduce that by three or four people, putting more people in aircraft."

The idea of incorporating speech recognition in daily Air Force operations came from efforts to use the technology in aircraft. Hughes said an engineer friend who had been working on incorporating speech programs in cockpits for more than a decade suggested trying it in the workplace. Hughes started doing research, and soon had the technology as an initiative for the JEFX experiment.

During the experiment, speech recognition is a Category 3 initiative, meaning it isn't being used in scenarios testing technology that could soon reach the field; however, both Romanowicz and Hughes expect to see people talking to their computers in JEFX 2000.

"It has matured much quicker than we expected," Romanowicz said. "We didn't know it would interface so smoothly. Industry has driven this technology and we're seeing the fruit of that today."

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